


Pharmacology 0606

Case Study: Pain Management


Arlene A. Kasten MSN, RN, CS
Zablocki VAMC
Milwaukee, Wisconsin



•Learning Objectives

After review of this case participants will be able to

- Select analgesic regimens that are appropriate for the severity of patient's pain
- establish monitoring parameters to ensure adequate pain relief with a minimum of adverse effects
- Convert a parenteral opiate regimen to an equianalgesic oral opiate regimen.
- Counsel patients on the appropriate use of opiate analgesics on an outpatient basis



Patient Presentation

Johnny Hert is a 63 y/o man in good health until 1 month ago when he developed upper abdominal pain and constipation. He's had weight loss of 18 # over past 2-3 MO. On recent examination by family MD liver edge was tender and LFT elevated. He is admitted to the hospital for diagnostic workup of abdominal complaints and abnormal lab findings.

CC: I'm having belly pain, my stomach looks like it is getting big. I feel so tired all the time. I have trouble urinating, it hurts when I finish."

Past medical history is negative for Cardiovascular, GI. or GU disease; no history of cancer or diabetes. He has had usual childhood diseases. He has not had previous surgery.

Family history: Father died, age 72, prostate CA, Mother died, age 64, CVA. Two siblings are in good health. One uncle died, age 80, rectal CA

Problem identification

- 1.b What information demonstrates the presence or severity of his condition?
 - Laboratory values
 - Radiological findings
 - Cytology (ascites fluid + for adenocarcinoma)
 - Cervical adenopathy
 - Weight loss

Problem identification

- 1.c What additional information is required to adequately assess this patient?
 - Provider needs basic knowledge of disease, including prognosis
 - Basic understanding of pain related to pancreatic cancer
 - Provider requires good understanding, if not expertise of pain management, specifically cancer pain.
 - Provider should be familiar with multidisciplinary resources

Cancer of the Pancreas

- Vague symptoms of abdominal distress
- Pain can be severe, worse in supine position, relieved in fetal position
- Findings of cervical or supraclavicular lymphadenopathy
- Disproportionately elevated alkaline phosphatase
- Metastasizes early and widely
- 5 year survival 1%-5% for inoperable lesions, < 10% survive 1 yr..

Pancreatic cancer pain

- Stretch of retroperitoneal nerves by bulky tumor mass
- Direct invasion of autonomic nerves
- Ductal obstruction and distention
- Invasion of somatic nerves
- Peri-pancreatic neuritis
- Distention of hepatic capsule
- Portal vein obstruction
- Bowel obstruction
- Ascities

Desired outcomes: determine the goals of symptomatic pain management

- Therapeutic goal: to minimize pain and provide reasonable comfort at lowest effective dose. To whatever extent possible, patient should participate in therapy. With chronic pain, rehabilitation and resolution of psychosocial issues may also be a goal.
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- Simplest individualized dosage, least invasive method
 - avoid IM route
 - Pain is whatever the person says it is
 - Determine meaning of pain to patient

Pain: an unpleasant, subjective sensory and emotional experience with actual or potential tissue damage or described in terms of such damage

- Cancer is associated with both acute and chronic pain
- Many patients equate cancer with pain and a agonizing painful death
- Chronic pain may include psychological component, environmental factors, insomnia, dependence and tolerance
- Basic assessment: description of pain; may be more than one type of pain, palliative or provocative factors, quality, radiation, severity, associated anxiety, depression, fatigue, anger, cognitive impairment, and social/cultural factors.

Therapeutic alternatives: what non-pharmacological options may improve patient's condition

- Treat obstructive pathology by biliary stenting; endoscopic or percutaneous
- Palliative cholejujunostomy or choledochojunostomy
- Combination of palliative radiation therapy and chemotherapy
- Multidisciplinary approach
 - Palliative care team

Clinical course

- Patient was begun on MS 2mg SQ q4H PRN for mild aching stomach and costovertebral angle pain. He also had temazepam 15mg qHS, PRN for sleep. Morphine sulfate relieved his discomfort for 4-6 hours, Respiratory function was not effected without complaints of drowsiness.
- Dose of MS was eventually increased without incident to 3mg SQ q4H PRN for increasing pain.

Provide your assessment of the effectiveness of the analgesic regimen

- Need to determine level of pain prior to medication; pain scales, inventories.
- Adequacy of pain relief measures, use of pain scale 1-10
- Information r/t emotional or psychological response
- No data as to other treatment which may have been provided or patient's response to that intervention
- No indication of patient's quality of life, ability to eat, take fluids, move about without discomfort
- Need to assess mental and emotional state, anxiety, depression, exhaustion, fear, etc.

What other interventions might be necessary during treatment with opiate analgesics?

- Nutrition and hydration need assessment and intervention
- Treat nausea
- Manage constipation
- Skin care r/t dryness, itch, lack of mobility
- Oral hygiene r/t poor hydration, potential for bleeding with brushing teeth r/t hepatic involvement

Non-Pharmacological Therapies

- Acupuncture for pain management and nausea
- Therapeutic touch
- Relaxation, Imagery
- Music therapy
- Biofeedback
- Hypnosis
- Prayer/spiritual interventions
- TENS
- Support groups, education

Based upon the patient's response to subcutaneous morphine, what therapeutic alternatives are available for controlling his pain as an outpatient?

- Oral preparations, both sustained release and short acting
- Rectal preparations to control pain and nausea
- PCA pumps for continuous infusion
- Transdermal
- Adjunctive therapies: neuroleptics, antianxiety, antidepressants. Antihistamine, steroids, diuretics

Optimal plan: What pharmacotherapeutic plan do you recommend?

- Around the clock dosing (ATC)
- Least invasive route: Oral is preferred
 - long acting/sustained release
 - breakthrough or rescue doses/ immediate release
- Alternative routes
 - rectal
 - sublingual
 - transdermal
 - breakthrough dosing
- Parenteral
 - PCA : Patient controlled analgesia

Plan cont..

- World Health Organization analgesic ladder
- Oral sustained release Morphine is drug of choice
- Breakthrough dosing with immediate release medication
 - may need to use alternative routes
- Adjunctive therapy according to symptoms
- Address adverse effects of medication
- Manage continuing effects of the disease
- Equianalgesic dosing/ conversion
 - slowly decrease parenteral therapy while slowly increasing oral
 - may need days for transition

Pharmacotherapeutic Plan cont.

- Current dosing: 3mg MS q4H = 18mg/24 hours
 - calculate the total daily dose and divide by dosing frequency of new preparation (18 divided by 2 = 9)
- Morphine sulfate, sustained release 10 mg q 12 hours
- Morphine sulfate, immediate release 3mg q 1 hour/prn
- for breakthrough pain
 - 25-50% of hourly dose or 5-15% of 24 hour baseline dose
 - may be liquid, oral tablet, sublingual
 - tablet or suppository per rectum, or SQ

Plan cont..

- Fentanyl transdermal Patch
 - Lowest dosage 25 ug/h
 - MS Contin dosage: 45-134 mg/day
 - option when oral dosing is stable, but patient is unable to take
 - Maximum serum levels may require 24 hours, steady state after
 - 2nd or 3rd application
 - cont. short acting meds during transition
 - Caution should be used with patients with liver disease

Pharmacotherapeutic Plan

- Constipation
- Goal of treatment is prevention of constipation by alteration of lifestyle (diet). Relieve symptoms, restore function
- all opiates associated with constipation, oral greater than parenteral;
 - stool softener, emollients, or laxatives: docusate, psyllium, lactulose,
 - bowel cleansing may be necessary: senna, Magnesium (MOM), cascara, bisacodyl, enema

Pharmacotherapeutic Plan

- Portal Hypertension: an increased pressure of the portal circulation resulting in venous congestion and varices.
- Ascities is complication off portal hypertension
- Diuretic therapy can be effective, slow process
 - spirolactone (most frequently used) 100-800mg/day
 - Furosemide may be added for first 3 days

Pharmacotherapeutic Plan

- Nausea
- Causes: radiation/chemotherapy, opiates, gastric outlet disorders, obstruction, anticipatory,
- Treatment goal: prevent or eliminate nausea and vomiting
- Non-pharmacologic: hypnosis, acupuncture, guided imagery, behavioral modifications
- Pharmacological: antacid, H2 blockers, antihistamine-anticholinergic, phenothiazines, Reglan,

Other Issues

- Anxiety, start with low doses of short acting medication
- Sedation
 - may not be unwanted
- Confusion low doses of Haldol have been found effective
- Dry mouth oralube, hard candy,
- Urinary retention may need catheter (intermittent or foley)

Additional Orders

- Low Na diet as tolerated
- Docusate Na 1 cap p.o. BID
- Bisacodyl suppository per rectum PRN if no stool for 2 days
- Spirolactone 100mg p.o. TID
- Furosemide 40 mg p.o. q AM x 3 days
- May straight cath if unable to void
- Hydroxyzine 50 mg p.o. TID

Assessment: How would the recommended therapy be monitored for efficacy, adverse effects and development of tolerance

- Patient must be assessed continuously; educate staff/patient/family
- Response to analgesia, especially if more than one type of pain and analgesic intervention
 - initially assessment may need to be hourly,
 - use of pain scales, pain assessments
- Quality of life
 - involve patient in management of symptoms; in setting goals
- Constipation
 - monitor dietary intake of fiber, adequate fluids
 - record bowel movements, insure privacy and safety, decide on plan with patient; every 2-3 day evacuation

Tolerance

- Tolerance occurs in all patients requiring opiates chronically, the first indication of tolerance is a decrease in the duration of analgesia
- Characterized by need for increasing doses to maintain desired effects. It is a desirable outcome that allows effective dose titration to proceed
- Concern with pharmacologic tolerance should not impede use of opioids early in the course of the disease
- Increased need for opiates should be assessed as presumptive evidence of disease progression

How would you counsel patient about how to properly take his medication?

- Discharge plan/medications should be written
- Education is essential
 - expected course of disease, expected physical effects, changes in body image
 - expected outcome of treatments and medications r/t symptoms
 - Name of each drug, purpose of the medication, potential side effects
 - Explain need for ATC dosing, explain breakthrough dosing
 - and need for reassessment

- Provide opportunity to discuss fears and concerns
- Identify issues of tolerance, dependence, addiction
 - encourage patient to adjust breakthrough dosing,
 - assess use of breakthrough dosing to facilitate increase in sustained release.
- Insure patient is aware of how to access health care providers with questions, need to change regimen, concern with side effects etc.
- Insure patient is aware of communication with other providers if indicated.
- Provide resources

Patient Resources

- Support groups
 - church, hospital, hospice sponsored
 - I Can Cope
- Internet sites
 - CancerNet
 - <http://cancermet.nci.nih.gov/cgi-bin/srchgi.ece?DBID=pdq&TYPE=search&UID=208+000.../>
- AHCPR guidelines; Patient guide
- American Cancer Society
 - 800-ACS-2345
- Wisconsin Cancer Pain Initiative
 - (608) 262 0978)

Patient Resources

- Roxanne Laboratories Incorporated (oral morphine infor.)
 - (800) 848 0120
- National Cancer Institute
 - 800-4-CANCER
- Cancer Care, Incorporated
 - (212) 221 3300

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